DOCUMENT RESUME

ED 477 590 SO 034 680

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TITLE Food for Education Indicator Guide. Food and Nutrition Technical Assistance.

INSTITUTION Academy for Educational Development, Washington, DC.

SPONS AGENCY Agency for International Development (IDCA), Washington, DC.

PUB DATE 2001-09-00

NOTE 19p.

CONTRACT HRN-A-00-98-00046-00

AVAILABLE FROM Food and Nutrition Technical Assistance Project, Academy for Educational Development, 1825 Connecticut Avenue NW, Washington, DC 20009-5721. Tel: 202-884-8000; Fax: 202-884-8432; e-mail: fanta@aed.org; Web site: http://www.fantaproject.org/ .

PUB TYPE Guides - Non-Classroom (055)

EDRS PRICE EDRS Price MF01/PC02 Plus Postage.

DESCRIPTORS *Childhood Needs; Educational Improvement; Educational Objectives; *Food; *Nutrition; *Outcomes of Education; Program Descriptions

IDENTIFIERS Conceptual Frameworks; *Food Security; *Indicators

ABSTRACT

As defined by the U.S. Agency for International Development, food security is attained "when all people at all times have both physical and economic access to sufficient food to meet their dietary needs for a productive and healthy life." In this guide, Food for Education (FFE) is defined as a program using food as a resource to improve educational outcomes. FFE programs are designed and implemented as part of a larger effort to improve educational quality. They combine food with other educational resources to enhance educational outcomes through integrated programming. In the short term, the link between FFE and food security is through the impact that FFE programs have on increasing the participation and progress of children in school. In the long run, the link is through the contribution that FFE makes to household conditions thanks to improved education. The publication is divided into four parts containing four chapters and two appendices. Chapter two presents the conceptual model underlying Food for Education programs and their links to food security; objectives commonly associated with Title II FFE programs are introduced and briefly discussed. Chapter three presents the indicators derived from this conceptual framework; for each indicator, precise specifications on wording, calculation, data needs and sources, and issues related to interpretation are provided. Appendix one contains more detailed information on how to calculate one of the indicators. (Contains 14 references.) (BT)

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FOOD AND NUTRITION TECHNICAL ASSISTANCE

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Food for Education Indicator Guide

Gilles Bergeron
Joy Miller Del Rosso

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FOOD AND NUTRITION TECHNICAL ASSISTANCE

Food for Education Indicator Guide

Gilles Bergeron
Joy Miller Del Rosso

This publication was made possible through the support provided to the Food and Nutrition Technical Assistance (FANTA) Project by the Office of Health and Nutrition of the Bureau for Global Programs Field Support and Research and the Office of Food for Peace, Bureau for Humanitarian Response at the US Agency for International Development, under terms of Cooperative Agreement No. HRN-A-00-98-00046-00 awarded to the Academy for Educational Development (AED). The opinions expressed herein are those of the authors and do not necessarily reflect the views of the US Agency for International Development. It may be reproduced if credit is given to the FANTA Project.

Recommended citation: Bergeron, Gilles and Joy Miller Del Rosso. Food For Education Indicator Guide. Food and Nutrition Technical Assistance Project, AED, Washington DC, 2001.

Published September 2001

Copies of the Guide can be obtained from:

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Contents

Page number 6 **Part 1. Introduction** 1.

Part 2. 2.
8 **Conceptual Framework**
8 2.1 Food Transfer to the Child
10 2.2 Income Transfer Effect for the Family
10 2.3 Resource Transfer to the Community
10 2.4 Complement to Other School Quality Improvements
11 2.5 Links to Food Security
11 2.6 Increasing the Effectiveness of FFE Programs

Part 3. 3.
12 **Collecting and analyzing the data**
13 3.1 Evaluation Indicators Measuring Educational Opportunity
13 3.1.1 Net Enrollment Rate
16 3.1.2 Mean Actual Attendance Rate
16 3.1.3 Estimated Attendance Rate
18 3.2 Evaluation Indicators Measuring Educational Progress
18 3.2.1 Average Grade Completed by Age 10
19 3.2.2 Cohort Survival to Grade 5
20 3.2.2.1 Apparent Cohort Method
20 3.2.2.2 Reconstructed Cohort Method
21 3.3 Monitoring Indicators
21 3.3.1 Absolute Enrollment
21 3.3.2 Dropout Rate
22 3.3.3 Promotion Rate
22 3.3.4 Continuation Rate
23 3.4 Summary of Data Requirements and Collection Strategies

Part 4. 4.
31 **References**
33 **Appendix 1:** Calculating Cohort Survival to Grade 5 Using the Reconstructed Cohort Method
36 **Appendix 2:** The Generic Title II Indicators

Acknowledgements

This Guide was written by Gilles Bergeron and Joy Miller del Rosso. The authors wish to thank the reviewers for their thoughtful comments during the development of this Guide. At USAID, Eunyong Chung of the Office of Health and Nutrition at the Bureau for Global Programs, Field Support and Research provided insight and support for the Guide and her efforts are appreciated. The staff of the Office of Food For Peace at the Bureau of Humanitarian Response also encouraged and supported the development of the Guide.

Save the Children seconded Joy Miller Del Rosso to work on this project with FANTA and we appreciate their technical, managerial and administrative support. A number of people at FANTA and from other organizations assisted in the development of this Guide. Tony Castleman provided extensive reviews and comments and helped write sections of the Guide. Anne Swindale, Bruce Cogill, Jennifer Smith-Nazarine and Jane Benbow provided extensive comments and advice. The Guide also benefited from comments and suggestions from the staff of the various Title II Cooperating Sponsors with Food for Education programs; the staff from the USAID Missions that maintain education programs in developing countries; and the staff from the Sustainable Development Office at the Africa Bureau at USAID. The authors dedicate this Guide to the Title II Cooperating Sponsors and to the primary school students of the developing world with the expectation that improved Food for Education programs will contribute to improved school performance and food security.

This series

This series of Title II Generic Indicator Guides was developed by the Food and Nutrition Technical Assistance (FANTA) Project, and its predecessor projects (IMPACT and LINKAGES), as part of USAID's support to develop monitoring and evaluation systems for use in Title II programs. These guides are intended to provide the technical basis for the indicators and the recommended methods for collecting, analyzing and reporting on the indicators. A list of Title II Generic Indicators that were developed in consultation with the PVOs in 1995/1996 is included in Appendix 2. The guides are available on the project website www.fantaproject.org.

Below is the list of available guides:

Agricultural Productivity Indicators Measurement Guide
Anthropometric Indicators Measurement Guide
Food Security Indicators and Framework for Use in the Monitoring and Evaluation of Food Aid Programs
Infant and Child Feeding Indicators Measurement Guide
Measuring Household Food Consumption: A Technical Guide
Sampling Guide
Water and Sanitation Indicators Measurement Guide.

PART I.

Introduction

1.

The US Agency for International Development (USAID), Bureau for Humanitarian Response, Office of Food for Peace (BHR/FFP) supports Food for Education (FFE) programming in developing countries through its PL-480, Title II Development (non-emergency) Program. By congressional mandate, all activities funded by Title II must foster the food security of recipient beneficiaries. As defined by USAID, food security is attained *"when all people at all times have both physical and economic access to sufficient food to meet their dietary needs for a productive and healthy life"*.

All Cooperating Sponsors (CSs) who use Title II resources must establish a monitoring and evaluation system to track progress and assess program impact. USAID generates materials to help them in this process. Currently, core generic indicators exist for Health and Nutrition, Water and Sanitation, Household Food Consumption, Agricultural Productivity, Natural Resources Management, and Food for Work/Cash for Work programs. This technical Guide was developed to provide a list of possible generic indicators to promote the effective monitoring and evaluation of Food for Education programs.

The Guide was developed in close collaboration with staff from PL-480, Title II CSs, USAID, and other stakeholders such as the World Bank and the World Food Programme. For this reason, and notwithstanding the fact that the Guide was specifically commissioned to address Title II CS needs, the approach and indicators suggested here can be used by other donors to monitor and evaluate the performance of their own FFE programs, including the US Department of Agriculture (USDA) Global Food for Education Initiative (GFFEI) programs.

In this document, FFE is defined as a program using food as a resource to improve educational outcomes. FFE programs are designed and implemented as part of a larger effort to improve educational quality. They combine food with other education resources – materials and supplies, teacher training, etc. – to enhance educational outcomes through integrated

programming.[1] In the short term, the link between FFE and food security is through the impact that FFE programs can have on increasing the participation and progress of children in school; in the long run, the link is through the contribution that FFE makes to household conditions thanks to improved education. Education is known to enhance productivity, raise incomes, reduce fertility among girls, and improve health and nutrition. If girls in particular are targeted to benefit, then the impact on food security can be even greater. Educational gains among girls should result in greater gender equity and empowerment of women, increasing their knowledge, self confidence, and earning potential with consequent food security benefits for their future children and family. Finally, when take-home rations are distributed as part of the program, FFE also improves households' access to food.

Chapter 2 of this Guide presents the conceptual model underlying Food for Education programs and their link to food security. Objectives commonly associated with Title II FFE programs are introduced and briefly discussed. Chapter 3 presents the indicators derived from this conceptual framework. These indicators were selected following extensive discussions between USAID and the CSs. They were chosen because they are appropriate, relatively simple to collect, and easy to interpret and because they represent broad agreement among partners. For each indicator, precise specifications on wording, calculation, data needs and sources, and issues related to interpretation are provided. Appendix 1 contains more detailed information on how to calculate one of the indicators.

[1] Historically, School Feeding Programs (SFPs) have been designed and implemented mainly with nutritional and humanitarian objectives in mind. The positive impact SFPs could have on attracting children to school and having them attend more regularly was recognized, but little or no effort was made to ensure that feeding was implemented within the context of other improvements in the quality of education. Over the past decade, however, it has become increasingly clear that at school age, feeding can play a significant role in helping countries to meet educational objectives. The most detrimental impact of hunger and malnutrition for children during their school-age years is the effect on their ability to participate and learn in school. The term "food for education," as well as the integrated programmatic approach it implies, evolved from the recognition of the important role of health and nutrition in achieving educational objectives.

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PART 2.0

Conceptual Framework

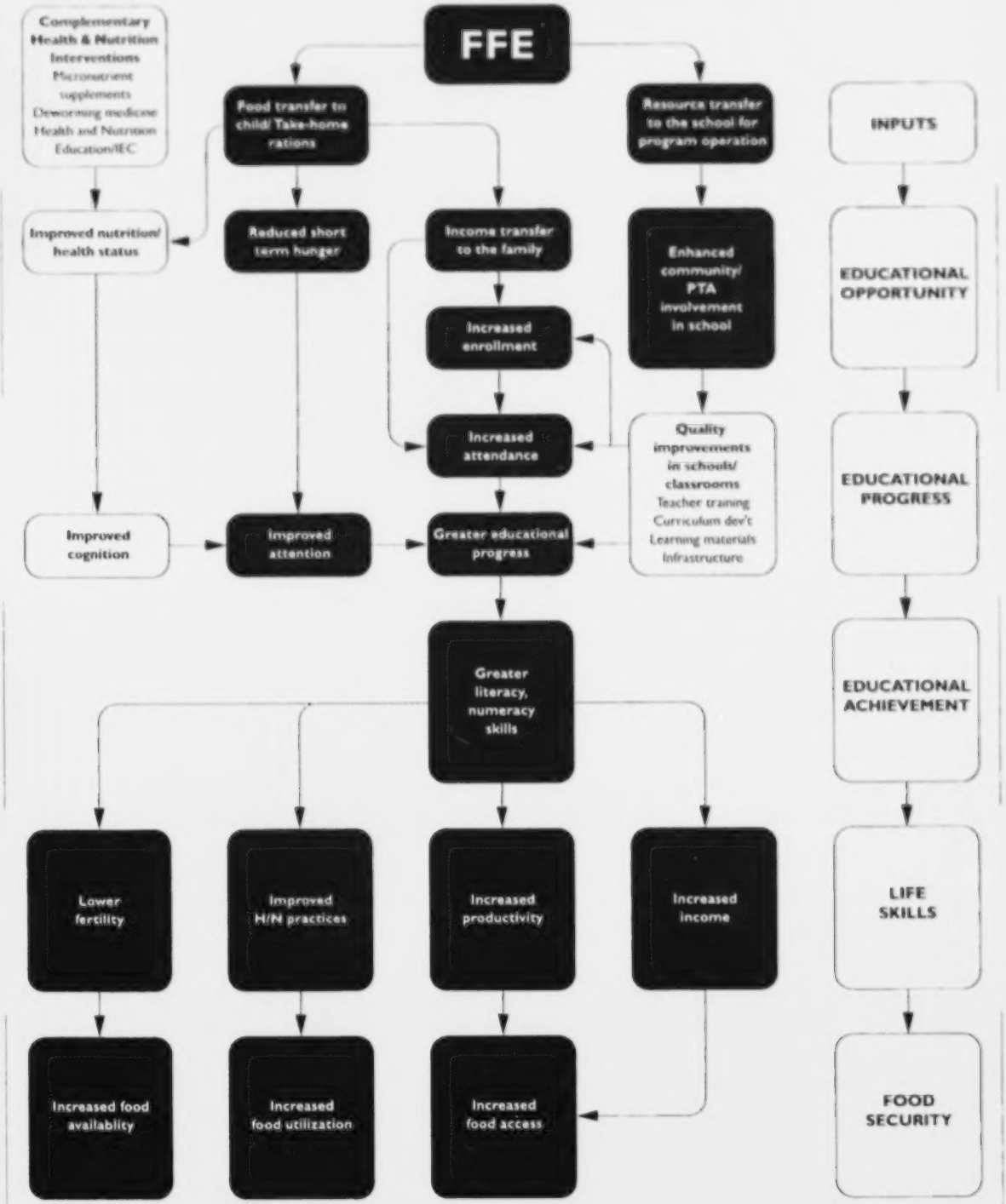
2.

It is by now widely accepted that nutrition and health problems among school-age children, including hunger, can severely limit children's opportunity to participate in school and diminish their ability to progress and achieve once enrolled. Other factors including lack of awareness by parents and families of the benefits of education, the poor economic condition of families, and socio-cultural stigma or deprivation – often an important inhibiting factor among females and other powerless groups – also contribute to children's non-participation in school. Food for Education programs can address some of these factors limiting the educational attainment of school-age children in developing countries. FFE programs provide a food transfer to school children that may also represent an income transfer to the family, and additional resources to the school and community to assist them in the operation of the feeding program (Figure 1).

2.1 Food transfer to the child

There are two primary objectives in providing meals or snacks to children at school. One is to increase the attractiveness of schools to children, thus improving attendance. The other primary objective is to alleviate short-term hunger among attending children. It is now well established that short-term hunger, common in children who are not fed before going to school, has an adverse effect on learning, since a hungry child has more difficulty concentrating and performing complex tasks, even if otherwise well-nourished (Pollitt 1990; Mathews 1996). School meals, provided early in the school day to alleviate hunger before or while classes are in session, will help children to be more attentive and concentrate better (Chandler *et al.* 1995; Grantham-McGregor *et al.* 1995). Ultimately these children will be more successful in school and progress further and more quickly (Myers *et al.* 1989). Schools will become more efficient as fewer children drop out and/or repeat grades. School meals or snacks can also alleviate specific nutritional deficiencies of school-age children, either through the use of selected fortified food aid commodities or through the appropriate selection of foods and menus.

Figure 1. Impact of FFE programs on food security



Note: Black boxes show the direct inputs and outputs from FFE programs and the pathway to improved food security.
The tinted boxes show the inputs and pathways that are dependent on other resources

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2.2 Income transfer effect for the family

The value of the meal the child receives at school can offset some of the costs of schooling such as fees, books, and supplies, or offset the opportunity cost of lost labor to the family. In some cases, the meal represents a substantial economic benefit to the family if the child does not eat at midday, or at some other time, from the family pot. The same benefit applies when take-home rations are used. Such income transfers can serve as an incentive for parents to send their children to school and to have them attend more regularly. It is widely recognized that school-based feeding programs can effectively encourage enrollment and improve attendance in school (Levinger 1986; World Bank 1992; Ahmed and Billah 1994). School meals, coupled with take-home rations, can serve as an effective mechanism for encouraging enrollment and continuation of girls, particularly in areas where female school participation is a problem (Devesdas 1985; Gupta and Hom 1994; Moore 1994).

2.3 Resource transfer to the community

FFE programs include resources to assist the school in implementing the feeding program. Generally, these are used to form and/or support a parent-teacher or other local association to organize the preparation and distribution of meals. Through this activity the community can be mobilized to participate more fully in the school. Active participation of Parent Teacher Associations (PTAs) in schools can contribute to improving the quality of teaching by, for example, increasing local supervision of teachers, making the school environment healthier, and generally raising the value of the school within the community. Such groups can also be used to build the capacity of community members not only to operate the feeding program but also to develop skills to assist in obtaining resources for other community development initiatives. This may include serving as a conduit for other CS programs, such as food-for-work or other projects that benefit the community as a whole. Likewise, school-based committees can serve as a focal point for channeling requests to external sources, such as the Ministry of Education or other donors. To achieve the benefits of an active and well-trained PTA or other community group, however, resources in addition to those available through FFE programs are most likely to be needed.

2.4 Complement to other school quality improvements

The framework in Figure 1 suggests the pathways through which the primary input of FFE programs – food – can contribute to food security via improved education. However, food alone is not sufficient to bring about the range of changes required to significantly improve educational outcomes. Other resources are needed for this to happen. FFE programs, as defined here, must function within the broader context of efforts to strengthen education, including improvements in school infrastructure, curriculum development and reform, teacher training, and educational materials. Since Title II cannot provide resources for these education inputs, it is the role of the CSs to ensure that FFE programs are well integrated with other funding sources for improving education. This will increase the likelihood that educational and food security goals are met. The link between FFE programs and quality improvements in education is key to attaining improved educational outcomes. Food can play an important role by helping to ensure that more children enroll in school, that they enroll at the appropriate age, and that they attend more regularly. Similarly, the alleviation of hunger via school meals can

be critical to improving the capacity of children to learn. FFE programs that operate effectively within this context of improvements in education quality ultimately should help to raise literacy, numeracy, and life skills in the population.

2.5 Links to food security

Higher levels of literacy and numeracy, at a minimum, make information more accessible to people and provide greater opportunities for employment. Education is strongly linked with agricultural productivity and income; both of these contribute directly to increasing access to food. Education is also closely associated with other factors influencing food security. Girls' education is associated with lower fertility rates, since staying in school delays the age of marriage and first pregnancies (Mehrota and Jolly 1997). Having smaller families increases overall food availability, both at the household and at the national level. Likewise, education contributes to a range of better nutrition and health practices, from health-seeking behavior to mothers' improved capacity to care for their children, including providing for their health and nutritional needs. These better practices contribute directly to improvements in the utilization of food. Finally, FFE programs that include take-home rations increase household access to food in the short term.

2.6 Increasing the effectiveness of FFE Programs

Offering other school-based health and nutrition inputs/interventions (in addition to food) can boost the educational, nutritional, and health value of FFE programs. Three key interventions that interact directly with the utilization of food are school-based helminth (deworming) control; micronutrient supplementation; and life-skills-based nutrition, health, and hygiene education with a behavioral focus. Life skills – a wide range of abilities related to self-confidence, decision making, negotiation, and communication that help to preserve an individual's physical and mental health and integrity – play a critical role in health and nutrition practices and fertility, which are key factors in achieving food security.

Some of these interventions could be supported by FFE resources, while others, such as the provision of pharmaceutical products, will require funding from other sources. (By congressional mandate, pharmaceuticals cannot be purchased with Title II resources.) It will not be possible, or appropriate, for Title II programming to directly support all of these interventions and programs. However, integrating such efforts with FFE will serve to increase the potential to meet both education and food security objectives.

PART 3.

Collecting and Analyzing the Data

Presented in this chapter are nine suggested indicators for monitoring and evaluating FFE programs. These indicators derive directly from the conceptual framework presented in Figure 1. Criteria used in selecting the proposed indicators include sensitivity, validity, reliability, cost, and simplicity.[1] Among the five evaluation indicators and four monitoring indicators, some measure educational opportunity and some measure educational progress.[2]

[1] Sensitivity implies the indicator is responsive to change. Validity means it is measuring what it is meant to measure. Reliability means the measure is consistent and replicable. Simplicity means it is easy to understand and to operationalize.

[2] Also used by USAID are the corresponding concepts of access (i.e., opportunity) and efficiency (i.e., progress).

Proposed Indicators for Food for Education Activities

Evaluation Indicator	Definition	What It Measures
Net Enrollment Rate	The percentage of primary school-age children in a school catchment area who are enrolled in primary school.	Educational opportunity
Mean Actual Attendance Rate	The ratio of total number of child-days actually attended during the year, to the total number of child-days in the school year.	Educational opportunity
Estimated Attendance Rate	The ratio of students present in school on a given number of days during the year (determined by head counts) to the number of children enrolled.	Educational opportunity
Average Grade Completed by Age 10	The years of school completed by 10-year-old children in a given population, divided by the total number of 10-year-old children in that population.	Educational progress
Cohort Survival to Grade 5	The percentage of children entering grade 1 of primary school who reach grade 5 without repeating any grades.	Educational progress

Monitoring Indicator	Definition	What It Measures
Absolute Enrollment	A simple tally of enrollment figures by school and by year.	Educational opportunity
Dropout Rate	The percentage of children enrolled in a given year who do not finish the school year.	Educational progress
Promotion Rate	The percentage of children enrolled in a given year who are promoted to the next grade at the end of the year.	Educational progress
Continuation Rate	The percentage of children enrolled in a given year who continue to be enrolled in the next year, whether they are promoted or not.	Educational progress

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In order to limit reporting requirements, USAID requests that only higher level (output, effect, and impact) indicators be reported. This approach is followed here.[4] Note that this Guide does not recommend measuring educational achievement. The reason for this is that there are no simple, valid, reliable, inexpensive, and sensitive ways to assess educational achievement. The Guide assumes that ensuring educational opportunity and progress will lead to greater educational achievement, and beyond that, to improved life skills and greater food security.

Not all indicators on these lists will be appropriate for all programs. The implementing CS should determine which indicators are the most relevant and feasible for collection in a given program area. In some countries, equally appropriate indicators may be more readily available. In those instances, the CS should demonstrate to USAID that those alternate indicators provide equivalent measures of their program's impact. However, CSs should use at least one evaluation indicator for educational opportunity and one for educational progress. Alternative monitoring indicators may also be proposed; however, the ones presented in this Guide are highly recommended based on their simplicity and relative ease of collection.

Each of the nine indicators is discussed in detail below. Items covered include the purpose of the indicators, how it is calculated, the terms that need definition, issues related to data collection, and any programmatic or analytical caveats that would affect correct interpretation of the data.

[4] Although not included in this Guide, FFE programs are also required to report on specific input and output measures that pertain directly to food distribution, for example, numbers of children fed, etc.

3.1 Evaluation indicators: measuring educational opportunity

Educational opportunity refers to a child's access, entry, and continuation in school, as well as a child's daily attendance and participation once officially enrolled. The suggested evaluation indicators for educational opportunity are: Net Enrollment Rate[5] and either Mean Actual Attendance Rate or Estimated Attendance Rate.

3.1.1 Net Enrollment Rate

Net enrollment rates measure the percentage of primary school-age children in a school catchment area who are enrolled in primary school. Net enrollment excludes enrolled children who fall outside the official primary-school age group. It does not matter whether children are overage or underage for their grade, as long as they are within enrollment age range for primary school grades. If needed, net enrollment rates can be calculated by level of education (standard or grade) and can be disaggregated by sub-populations; for example, girls, urban or rural schools, or some other characteristic.

Calculation

$$\frac{\text{(Total number of primary-school-age children enrolled in primary school)} * 100}{\text{Total number of primary-school-age children in the school's catchment area}}$$

Definition of Terms

Primary-school-age: the age range in which a child is expected to attend primary school. This age range is determined by the official age of entry to primary school and the number of grades in the primary system. For instance, in a country with six primary grades and where the entry age is six, the age range would be from six to twelve years old. Often adjustments may be required in this official age range to better reflect the actual situation (Box 1).

[5] All evaluation indicators of enrollment relate the number of pupils enrolled (officially included in a school register) in a given age group or level of education, to the size of a given reference population. As such, these rates are relative measures of the number of children enrolled compared to a population age group. Two enrollment rates are typically found in the literature: net enrollment and gross enrollment. The difference between the two is that the gross enrollment rate considers all children enrolled in a school, regardless of their age, whereas the net enrollment rate excludes children who fall outside the primary school age group (according to the national/local definition of school-age group). This Guide recommends the use of net enrollment because it more accurately reflects the educational opportunity goal of FFE programs: increasing the number of primary-school-age children who enroll in school.

Box 1. Adjusting primary school age

In developing countries children frequently enter school at later ages than the official one, and grade repetition is very high. In these situations adjustments in the primary school age range are needed. The recommendation is to add two or three additional years to the actual primary school age range. In Honduras, for example, although schooling begins at six and the primary school has six grades, the Ministry of Education adjusts for late entrants and repetition by considering all children between six and fifteen to be of primary school age. The CS should consult with local sources for guidance on the "unofficial" and "official" primary school age range. If no local guidance is available, the CS should assess the factors affecting the age of children in primary school and make appropriate adjustments if needed.

Enrolled child: a child who is officially included in a school register and has met individual country or district enrollment procedures. These procedures and requirements vary. For example, the duration of the enrollment period in one country may require children to enroll before the school year begins whereas in another country they may be able to enroll within the three first months of the school year. The CS must take these local enrollment practices into account when using this indicator.

School catchment area: the area from which a school draws its students. This area may be difficult to delimit if the Ministry of Education does not have precisely defined boundaries, or if boundaries are not enforced. Also, schools may accept students regardless of their residence (for instance, schools that are privately operated).

Data Issues

The usual source of actual data for the numerator (total number of primary-school-age children enrolled in primary school) is the school register or the school records file. Depending on the country's education management information system, aggregate data may also be available at the regional level that provides estimates of the number of children by school, age, gender, and other potential factors of interest. Although there may be issues related to accuracy of school records, the absolute number of children enrolled in schools should be fairly straightforward and easy to obtain.

Once this information is obtained, the number of these children who fall within primary school age groups must be determined. If the school does not record age, then birth records or teacher /family/student age estimates may be used. Alternatively, if the names of all school-age children are available from local records, these can be compared with enrollment records to determine the number of *primary-school-age* children enrolled. Note that unlike the enrollment values used in other indicators in this Guide, this indicator uses the number of primary-school-age children who are enrolled in school. In many cases, this value will be different from the total number of enrolled children. This value may also be more difficult to accurately obtain than the number of enrolled children of all ages.

Availability of actual data for the denominator (total number of primary-school-age children in the school's catchment area) of the enrollment rate may present significant problems. A school's catchment area may not be well defined and, even when it is, no census may exist of the total population living within that area, much less the primary-school-age population. Up-to-date data that reflect the year of program operation are even less likely to be available, particularly at the level at which a CS typically operates (i.e., the community).

Nevertheless, if feasible, the following sources can be explored, although the accuracy of the data obtained would need to be assessed:

- **Community mapping.** Programs with a strong community base may conduct frequent census or community mapping exercises. This is quite labor intensive, however, and requires that clear school boundaries be delimited. If using this data source, the CS must ensure that the information has been collected on a large scale and covers all program schools.

• **Community-level statistics.** Local birth rates from birth certificates or from church or other institutional records may be used to extrapolate the size of the school-age population. Note, however, that this information would need to be adjusted based on infant mortality, local migration patterns, other statistics, and qualitative information from key informants.

• **Government statistics.** National or regional-level census data could be used to extrapolate an estimate of the school-age population in the program area. Given that census data are usually not collected annually, however, estimates would have to be adjusted yearly for changing demographics.

• **Sample survey data.** Opportunities to collect sample survey data through education surveys or questionnaires may be available if the FFE program is integrated with broader efforts to improve the quality of education. In certain circumstances, such approaches may be the only way to obtain accurate data (see Box 2 for a description of how to collect data for this indicator using a sample survey).

Box 2. Collecting sample-based data

Sample-based surveys may conveniently be used to estimate both the numerator and the denominator of the enrollment rate. Two-stage cluster sampling is recommended. The steps involved in this approach are:

Step 1: Selection of a random sample of schools. The first stage of the cluster sampling strategy is to list all schools participating in the program and select a subset of those following the rules explained in FANTA's *Sampling Guide* (Magnani 1997).

Step 2: Establish the school catchment area. Once a subset of schools has been selected, the catchment area for each of the selected school must be determined. If this information is not readily available from local education authorities, the CS has to establish those boundaries itself, then list all the households that live within the schools' catchment areas. This will provide the sampling frame for each school. This can be done relatively easily using community mapping, aerial photo interpretation, or a similar technique.

Step 3: Determine sample of households to visit. The households to be visited are randomly selected using the sampling frame established in Step 2. The number of households to select in each catchment area is again determined using the two-stage cluster sampling strategy explained in the *Sampling Guide*.

Step 4: Survey selected households. Each household selected is visited to establish, first, how many primary-school-age children live in this household; and second, how many of those children are actually enrolled in school.

3.

Analytical Caveats

Assessing the impact of the FFE program through changes in the rate of net enrollment is subject to a number of important programmatic considerations:

• **School absorptive capacity.** A school that is already overcrowded may not be able to absorb more children unless other actions designed to increase capacity (e.g., building more classrooms) are taken.

• **Improvements in learning.** The success of an FFE program may mean that students move more rapidly through the system, which may reduce overall enrollment figures as fewer students remain in the same grade year after year.

• **Exclusion of over-age children.** If a large number of over-age children are enrolled in school, but excluded from the data, improvements in educational opportunity may not be reflected in changes in the net enrollment figures.

• **School migration.** If FFE programs operate in selected schools of an area, then increased enrollment figures may stem not from increased overall enrollment in the area, but rather from drawing students away from neighboring schools that do not have FFE programs.

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• **Contextual factors.** Family and child characteristics, educational reforms, new school construction, split shifts, and other policy changes may influence enrollment. Likewise, the motivation for parents to enroll children in school is affected by the quality of schools, parental and community expectations for future economic and social gains based on school participation, immediate economic constraints (e.g., school fees, clothing), and the need for child labor. Quantitative and qualitative information on these factors is needed to correctly interpret changes in net enrollment rates.

3.1.2 Mean Actual Attendance Rate

Attendance refers to how often a child who is already enrolled in school actually attends school over the course of the school year. The mean actual attendance rate is the ratio of total number of child-days actually attended during the year to the total number of child-days in the school year. It is based on the percentage of days each given child attended school in a given year. It relies on actual records compiled daily in class registers by school teachers. As with enrollment rates, this indicator can be disaggregated according to gender, urban or rural areas, or any other subpopulation of interest to the program.

Calculation

$$\frac{\text{(Sum of the number of days each child is present in school in the year)} * 100}{\text{(Number of school days in the year)} * \text{(Number of students enrolled in school)}}$$

Definition of Terms

Child present in school: in principle, a child present in school when instruction begins and for the entire instruction period is considered present during a school day. In practice, however, teachers take attendance in the morning and have no way of keeping a record of children who do not attend for the entire day.

School day: a day that the school is open. The actual figures, not the official number of school days, are the relevant ones. If the school remains closed for a particular reason (e.g., a teacher did not show up, or a holiday was declared locally), then the official total number of school days in the year should be adjusted accordingly.

Enrolled child: Unlike in the Net Enrollment Rate above, this indicator uses the total number of children enrolled in school, regardless of age.

Data Issues

Data reliability is the major issue in using student attendance data that come from teachers' daily records and that are aggregated on a monthly or other periodic basis. School officials may have an incentive to inflate attendance records since the level of FFE inputs a school receives is sometimes related to school enrollment and attendance figures. Teachers often do not maintain accurate records either because they lack proper training or because they find it too time consuming. Children may be counted as attending school who come to school to receive their meal and leave after they have eaten. In these situations, alternative strategies are needed, such as estimations of attendance rate using spot checks via program staff visits or special data collection forms administered on a preselected number of specific days that take into account weekends, holidays, and seasonal and other factors affecting regular attendance.

3.1.3 Estimated Attendance Rate

The Estimated Attendance Rate is based on head counts of students present in school on a given number of days during the year. For each day the count is made, the attendance on that day is compared to the total number of children enrolled in school to produce the attendance rate. These numbers are then used to extrapolate general attendance levels for the year. The process for obtaining this measure is described in Box 3.

Box 3. Estimated attendance

The estimated attendance rate is based on a random sample of schools in the program area. One of two approaches may be used to conduct the count:

1) Use a special data collection form, implemented by a CS representative in a series of unannounced spot visits on a random number of days. Count the number of students present on these days.

2) Use the same form, implemented by school officials, to take a head count of students in their school on a pre-selected number of specific days. For example, fifty days could be chosen that have taken into account weekends, holidays, and seasonal and other factors affecting regular attendance.

The total number of children enrolled in primary school would be the actual value listed in the school register.

The first approach is preferable since the second involves the same data bias problems noted for mean actual attendance data collected by teachers.

Calculation

$$\frac{\text{(Total number of children present in school on any given school day)} * 100}{\text{Total number of children enrolled in school}}$$

Definition of Terms

Children present in school: in principle, a child present in school when instruction begins and for the entire instruction period is considered present during a school day. In practice, however, teachers take attendance in the morning and have no way of keeping a record of children who do not attend for the entire day.

School day: a day that the school is open. The actual figures, not the official number of school days, are the relevant ones. If the school remains closed for a particular reason (e.g., a teacher did not show up, or a holiday was declared locally), then the official total number of school days in the year should be adjusted accordingly.

Enrolled children: Unlike in the Net Enrollment Rate above, this indicator uses the total number of children enrolled in school, regardless of age.

Data Issues

When collecting estimated attendance data (assuming it is collected by the CS representative), the following should be considered:

- **Distribution and number of count days.** The sample days must be distributed throughout the year. A single survey is not acceptable. CS knowledge of weekly and seasonal fluctuations in attendance should be used to select the best time for count visits. As a general rule, periods of less fluctuation in attendance require fewer visits; periods of greater fluctuation require more frequent visits. More specific rules for establishing the total number of days to be sampled are presented in FANTA's *Sampling Guide* (Magnani 1997). Days for count visits must be random, and advance warning to school authorities should not be given.

- **Counting process.** All students present at school that day should be counted. A separate count should be made in each class. The count should be made at a point in the school day that only children who attend the full school day are counted, not those who miss class time but receive food by arriving late or leaving early. For example, if schools distributing food early in the school schedule face problems with children leaving after the distribution and not attending a full school day, then the count should be made after the meal rather than before. Based on school schedules and distribution timings, the CS should determine which time is most appropriate for getting an accurate count.

- **Rate calculation.** After all classes are enumerated, the total school attendance rate for that day can be calculated.

- **Contextual factors.** During the count procedure, additional contextual information may also be collected to facilitate disaggregation of the data (by gender, for example) or to assist in interpreting the data.

- **Data collection over time.** The sample of schools included may be different for each of the three surveys (baseline, mid-term, final), but it need not be so. Indeed, using panel data (i.e., going to the same schools for all three surveys) would reduce error, and facilitate field work as the sampling frame would need to be drawn only for those schools.

- **Enrollment rate.** Note that the enrollment figure used in the denominator (and in denominators of several subsequent indicators) is total number of children enrolled. This will often differ from the value used in the calculation of Net Enrollment Rate, which includes only primary-school-age children.

Analytical Caveats

Seasonal variations and other local conditions will greatly affect attendance. The process of estimating attendance rates attempts to compensate for these factors. However, when using actual attendance figures, these factors must be considered. When estimated attendance data obtained from spot checks are being used to verify actual data, the data must be consistently timed across the years of the program in order to produce comparable figures.

3.2 Evaluation indicators: measuring educational progress

Educational progress refers to the rate at which children advance through the education system. Normal progress would be one year per grade or standard. A slower pace would indicate education efficiency problems. Some educational progress indicators pertain only to children who are enrolled in school. However, a population-based indicator may account for a proportion of children who have been left out of the school system (those who have never enrolled or who have dropped out early), and thus also indicate something about educational opportunity. Two impact indicators of educational progress are suggested: Average Grade Completed by Age 10 or Cohort Survival to Grade 5.

3.2.1 Average Grade Completed by Age 10

This indicator measures the years of school completed by 10-year-old children in a given population, divided by the total number of 10-year-old children in that population. It indicates the internal efficiency of a school system, that is, whether learning is taking place at the prescribed rate. For example, a school system whose entry age is 6 would be operating at full efficiency if 100 percent of 10-year-old children had completed grade 4.

Calculation

$$\frac{\text{(Sum of school grades completed by all 10-year-old children in the population) *100}}{\text{Total number of 10-year-old children in the population}}$$

Definition of Terms

School grade completed: last school year or grade/standard completed by a child. This does not include the current grade or standard that the child may not have completed.

10-year-old child: the term relates to the child's age, and does not consider the age or date at which a child started schooling. Simply put, it collects information for all children who, at the moment of the data collection, have celebrated their tenth birthday but not yet their eleventh birthday.

Data Issues

The "Average Grade Completed" indicator requires a population-based random survey of households. Parameters are best estimated using cluster sampling, and thus the same sample considerations described above for Net Enrollment Rate apply for this indicator as well. In fact, good efficiency can be achieved if these two indicators are

collected simultaneously using the same sample.[6] For this indicator, the steps will be the same as described in Box 2, except that Step 4 will involve counting the number of 10-year-olds and the number of grades they have completed.

Note that all age-dependent indicators (such as this one) are subject to error in countries where age data are problematic to collect. The same recommendations apply as those in section 3 for Net Enrollment Rate.

Analytical Caveats

This indicator is not intended to compare the level of educational progress between countries or programs, but rather to measure changes in the average grade completed by age 10 from a program's baseline to its mid-term or completion. Box 4 describes how this indicator was used to analyze differences in educational access and progress in different population groups in the Dominican Republic.

Box 4. Use of average grade completed in the Dominican Republic

Use of "Average Grade Completed by Age 10" as an indicator of educational access and progress was tested with data from a National Household Survey in the Dominican Republic. Average grade completed by 10- year-olds was found to be significantly higher in urban areas than in rural areas. The difference was close to a full year, clearly reflecting the fact that rural children tend to start school a year later than urban children. The indicator also varied significantly by household income level. On average, 10-year-old children in the poorest 25 percent of households had not reached second grade as indicated by the mean "grade completed" of 1.8; in contrast, 10-year-old children in the richest 25 percent of households were close to being at grade level, with a mean "grade completed" of 3.2. This indicator effectively captured that poorer children are more likely not to be in school at all, to have started school later, and to have dropped out or repeated grades.

3.2.2 Cohort Survival to Grade 5

Cohort Survival to Grade 5 measures the percentage of children in a given school cohort (those entering grade 1 together) who reach grade 5 without repeating any grades. This indicator is commonly used to measure the holding power of schools, or how well schools maintain and promote children through the system. Completion of grade 5 is often used as a proxy for the minimum level of retention required to attain literacy.

The most accurate way to obtain information on cohort survival is through an individualized data coding system in which an academic history record is kept for each child with detailed information on the child's status, including transfers to other schools. This system is too expensive and difficult to maintain to be feasible in developing-country settings. As an alternative, indicators of cohort survival have been built around estimated, as opposed to actual, models of "student flow". These models vary in their complexity and the information that they provide. Student flow models attempt to answer questions like: What proportion of the children entering the cycle of education in a given year will complete the cycle? How many will drop out at different grades? How many will repeat, and at which grades? How many "student years" are invested in a given cohort during its stay in the system?

For the sake of simplicity and ease of calculation, an estimate of the percentage of children entering grade 1 who reach grade 5 without repeating any grades is suggested. This implies that the student flow model will track those students who proceed through the system at the desired rate of one grade per year. This flow model will not follow repeaters who remain in the system and potentially complete the cycle in more than the desired number of years.

The CS must decide which method of student flow to use in calculating this indicator. Two different method options are suggested, and the CS's choice will depend on the information available, as described in detail below. As with enrollment rates, this indicator can be calculated according to gender, geographic location, etc.

The data collection process and calculation for this indicator will vary depending on which method is used. If grade-wise data on enrollment *and repeaters* – students who repeat the same grade the following year – are available for

[6] Parameters for sample calculation should be based on the indicator that represents the goal that seems of greatest import to the program.

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two consecutive years, it is recommended that the *reconstructed cohort method* be used. If data on repeaters are not available, then the *apparent cohort method* may be used, provided the necessary enrollment data are available.

3.2.2.1 Cohort Survival to Grade 5: Apparent Cohort Method

This approach provides the crudest measure of cohort survival. It is used when data on repeaters are not available. Enrollment in grade 5 in a particular year is compared with enrollment in grade 1 four years earlier. Since this approach does not account for repetition, it may be appropriate where automatic promotion is in effect.

Calculation

$$\frac{\text{(Total number of children in grade 5 in school year Y) * 100}}{\text{Total number of children in grade 1 in school year Y-4}}$$

Definition of Terms

School year Y: the reference school year.

School year Y-4: the school year falling four years prior to the reference year.

Analytical Caveats

- This method of measuring the indicator does not account for repetition. That is, some of the children in grade 5 may have repeated along the way and therefore do not in fact belong to the cohort being measured. Hence, if there is significant repetition, interpreting the rate obtained from this method may be problematic.

- Similarly, this method also does not account for new entrants or re-entrants who join at a grade higher than grade 1 and therefore may reach grade 5 with the given cohort but who were not counted in the original cohort.

- This method (like the reconstructed cohort method below) also does not account for non-program influences on enrollment such as migration, natural events, or conflict that may affect enrollment patterns during the measurement period.

3.2.2.2 Cohort Survival to Grade 5: Reconstructed Cohort Method

If repetition data are available, the reconstructed cohort method for estimating student flow may be used. The reconstructed cohort method is much preferred over the apparent method since it takes account of repetition as well as dropout in the system. Both repetition and dropout of students play significant roles in the flow of students in any given cohort, and the FFE program would be expected to show an impact on these factors.

To apply this method, data on enrollment by grade for two consecutive years and on repeaters by grade between the first and second of these years are sufficient to estimate promotion, repetition, and dropout rates for each grade. These rates are then applied to subsequent years to create a "reconstructed" pupil-cohort flow.

Calculation

The calculation of this indicator requires a number of steps to arrive at the actual cohort survival rate. The rate is given as:

$$\frac{\text{(Number of children in a given school cohort who reach grade 5 without repeating) * 100}}{\text{Number of children in the original school cohort}}$$

Details about the calculations for this formula, including a concrete example, are given in Appendix 1.

Definition of Terms

School cohort: a group of students who join the first grade of a given cycle in the same school year.

Analytical Caveats

- Because this method uses data from two school years only and applies the resulting rates across five school years, it

is in fact measuring the status of survival to grade 5 at one particular point in time. The resulting rate should not be interpreted to show anything about an actual five-year period of a program (unlike the survival rate obtained from the apparent cohort method, which does measure survival across five actual school years, albeit crudely). Rather, the rate calculated with this method measures survival status for the school year cycle from which the data are taken. With this method, the survival rate to grade 5 obtained using data from an earlier two-year period can be compared to the rate obtained using data from a later two-year period to indicate impact over time.

- This indicator does not account for non-program factors that may lead to significant changes in enrollment patterns. For example, the indicator does not take into account migration, birth, or death rates, etc., during the measurement period. If there has been some large occurrence (cyclone, earthquake, etc.) during that time period, there may have been large population migrations. Likewise, this indicator does not address naturally mobile or transient populations.

- This indicator does not take into account new entrants. As noted, if the population served by the FFE program is highly transient, with many families moving into and out of the area regularly, then interpreting the indicator may be problematic.

- Changes in school policies impact on promotion and repetition. For example, where automatic promotion policies are in effect, repetition rates may be nil. These factors should be considered in the selection and use of this approach to calculating cohort survival.

3.3 Monitoring indicators

Absolute Enrollment is the suggested indicator to monitor *educational opportunity*. Indicators to monitor *educational progress* must take into account whether students remain in school throughout the school year, are promoted to the next grade once the school year is over, and continue attending school the following year. Three indicators are recommended to monitor educational progress: Dropout, Promotion, and Continuation Rates. Each of these detects a different dimension of educational progress. Failure to attain improvements in any one of them points to a specific problem. Early problem identification may assist managers in adjusting programs to help address specific school deficiencies.

3.3.1 Absolute Enrollment

All schools maintain enrollment records, and most tally and provide this information to the next level – district or provincial – for national statistics. For the purpose of monitoring educational opportunity in program schools, a simple tally of enrollment figures by school and by year is recommended. The data can be disaggregated by grade and by gender. These absolute figures can be used to show the overall trend in enrollment in program schools.

3.3.2 Dropout Rate

The Dropout Rate measures the success of the school in retaining its student population during a normal school year. Dropouts are those children who enrolled at the beginning of the year but stopped coming to school before the school year was completed, and thus did not take end-of-year assessments. The Dropout Rate is thus the ratio of children who did not complete the school year to the number of children enrolled in school that year.

Calculation

$$\frac{\text{(Number of children not completing the school year in year Y) * 100}}{\text{Number of children enrolled in school in year Y}}$$

Definition of Terms

Enrolled children: Unlike in the Net Enrollment Rate above, this indicator uses the total number of children enrolled in school, regardless of age.

Children not completing the school year: a count of students who did not complete the normal end-of-year assessment (final exam or other) used to determine promotion or grade repetition.

Data Issues

- Defining "dropout" may be particularly difficult where children leave school for extended periods of time due to tradition and culture, but ultimately return to school.

- Non-program factors heavily influence educational progress. Dropout rates, for example, are a direct reflection of migration. Children who drop out of one school may in fact be transferring to another school in another area. This phenomenon has actually resulted in an increase in dropouts in program schools, although the reason is unrelated to the FFE program.

3.3.3 Promotion Rate

The Promotion Rate measures the percentage of children in any given grade who are promoted to the next grade at the end of the year. This indicator is calculated within a single school year; it does not presume that students (whether promoted or not) will continue attending school the following year.

Calculation

$$\frac{\text{(Number of children promoted to the next grade at the end of the school year Y) * 100}}{\text{Number of children enrolled in school in school year Y}}$$

Definition of Terms

Number of children promoted: children who have been designated to advance to the next grade in the next school year.

Number of children enrolled: Unlike in the Net Enrollment Rate above, this indicator uses the total number of children enrolled in school, regardless of age.

Analytical Caveats

Some countries base grade promotion on quotas, not on students' merits. This may reflect a lack of capacity at higher levels. Other countries establish a specific "passing" standard. In other cases, countries have established an automatic promotion policy for certain grades, regardless of performance. These factors, and any change in such policies over time, must be taken into consideration when assessing promotion rates.

3.3.4 Continuation Rate

The Continuation Rate measures the capacity of the school to retain its students from one year to the next. It includes all continuing students, whether they are promoted or not, but excludes new entrants to the school from one year to the next.

Calculation

$$\frac{\text{(Number of children enrolled in year Y+1) – (Number of new grade-1 enrollees in year Y+1) + (Number of children who graduated out of the school in year Y) – (Other [non-grade-1] new enrollees in year Y+1) * 100}}{\text{Number of children enrolled in year Y}}$$

Definition of Terms

New grade-1 enrollees: children newly enrolling in the school who enroll in grade 1 in the given year.

Graduated children: children who successfully complete grade 5 (or whatever grade is being used as the upper parameter) at the end of the given year.

Other new enrollees: all new entrants to the school in the given year who were not enrolled the previous year, except those who are newly enrolling in grade 1.

Enrolled children: Unlike in the Net Enrollment Rate above, this indicator uses the total number of children enrolled in school, regardless of age.

Year Y: the reference year.

Year Y+1: the year following the reference year.

Data Issues

The rate must be calculated individually for each school where the FFE program is active, and the final indicator is an average of the rates of all program schools. (For example, suppose a program covers two schools, and School A's Continuation Rate is 65 percent and school B's Continuation Rate is 75 percent. The final indicator reported for Continuation Rate will be 70 percent.)

3.4 Summary of Data Requirements and Collection Strategies

Table 1 summarizes the data requirements and calculation strategies for the indicators discussed in this Guide. Appendix 1 provides a detailed description about how to calculate the indicator Cohort Survival to Grade 5 using the Reconstructed Cohort Method. For the other indicators, detailed step-by-step calculation procedures are available at: www.fantaproject.org

Table 1: Summary of data requirements and collection strategies for FFE indicators

Indicator and calculation	Data requirement	Sources of information	Data collection process	Recommended collection agent [A]
Net Enrollment Rate *(using household sample survey data)* [B] (Total number of primary-school-age children enrolled in school in all sample households) ÷ (Total number of primary-school-age children in all sample households)	Number of primary-school-age children in sample households who are enrolled in school. *(numerator)*	Sample household survey.	Determine the number of those primary-school-age children in surveyed households who are presently enrolled in primary school.	CS or outside agent of the CS.
	Number of primary-school-age children in sample households. *(denominator)*	Government educational authorities; observation of rules and norms of targeted area. Sample household survey; birth records, parents' estimates of age.	Determine primary-school-age groups from government educational authorities. If not available, estimates can be made based on observed rules and norms in the area. Identify the school catchment area using the process described below for Net Enrollment Rate (full population data). Select sample households in the catchment area as per the process outlined in FANTA's *Sampling Guide* (Magnani 1997). Determine the number of children in the primary school age group in each household surveyed. If exact age is not known, use birth records, reference events, and parents' estimates.	CS or outside agent of the CS.

[A] Four distinct types of data collection agents are recommended: a) CS (representatives of the Cooperating Sponsor); b) outside agent of the CS (evaluation or auditing institution under contract to the CS); c) community organization (a local-level organization involved in the implementation of the school and/or the FFE program); d) school supervisor (the person responsible for supervising the school's operation, e.g., a community organization representative, government employee, or private school principal or director, depending on the nature of the school).

[B] For Net Enrollment Rate, use of a sample survey is recommended over trying to use full population data because a) it may be problematic to collect accurate full population data for this indicator, b) other useful information can be collected during the sample survey, c) sample surveys enable direct contact with, and feedback from, beneficiary population, and d) sample surveys rely less on school records, which may have data biases.

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Table 1: *continued*

Indicator and calculation	Data requirement	Sources of information	Data collection process	Recommended collection agent
Net Enrollment Rate *(using full population data)* (Total number of primary-school-age children enrolled in primary school) * 100 (Total number of primary-school-age children in the school's catchment area)	Total number of primary-school-age children enrolled in primary school *(numerator)*	School enrollment records, birth records, age estimates	From the school enrollment records, determine the total number of enrolled students who are of primary school age. If the school does not record age, use birth records or teacher/ family/student estimates of age for borderline students. Alternatively, if names of all school-age children are obtained for the denominator below, these may be compared with enrollment records to determine the number enrolled.	CS, outside agent of the CS, or community organization.
	Total number of primary-school-age children in the school's catchment area. *(denominator)*	Government educational authorities; observation of rules and norms of targeted area.	Determine primary school age groups from government educational authorities. If not available, estimates can be made based on observed rules and norms in the area.	CS, outside agent of the CS, or community organization.
		Government or school records; observation of distances to local schools and attendance patterns by area.	Identify the catchment area. If neither educational authorities nor the school have defined an official catchment area, a judgment may be made based on local observations. One method is to determine the furthest distance in each direction from which students attend the school. The covered area can be taken to be the catchment area unless there are functioning schools in closer proximity to some of these areas, in which case the catchment area becomes the area from the school under assessment to the point where the neighboring school is equidistant.	
		Local records; community survey information; census information.	Calculate the number of primary-school-age children in the identified catchment area. If population surveys have been conducted or if local birth records exist, they may be used. Otherwise, regional census information can be used to extrapolate an estimate.	

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Table 1: *continued*

Indicator and calculation	Data requirement	Sources of information	Data collection process	Recommended collection agent
Mean Actual Attendance Rate (Sum of the number of days each child has been present in school in the year) * 100 --- (Number of school days in the year) * (Number of students enrolled in school)	Sum of the number of days each child has been present in school in the year. *(numerator)*	School attendance register; attendance summary totals.	From the teacher's attendance summary, record the total number of student-days in the year. That is, the sum of the number of days each student has been present in school during the year.	CS or outside agent of the CS.
	Number of functioning school days in the year. *(denominator)*	School schedule, work register, or attendance register.	Count the number of functioning school days in the present school year. Holidays and days in which school was not in session due to teacher absences are not included in the count.	CS or outside agent of the CS.
	Number of students enrolled in school. *(denominator)*	School enrollment records.	Count the number of students enrolled in school for that year.	CS, outside agent of the CS, community organization, or school supervisor.
Estimated Attendance Rate (Total number of children present in school on any given day) * 100 --- (Total number of children enrolled in school)	Total number of students present in school on any given school day. *(numerator)*	Student head count at school premises on the day of a school visit. Or: Separate teacher record.	During an unannounced visit to the school, count the number of children in attendance. A less costly strategy with greater risk of data biases: the teacher maintains a separate record of attendance for certain pre-selected days.	CS or outside agent of the CS. Teacher.
	Total number of children enrolled in school. *(denominator)*	School enrollment records.	Count the number of students enrolled in school for that year.	CS, outside agent of the CS, or community organization.
Absolute Enrollment Rate Number of students enrolled at the time of assessment	Number of students enrolled in the school.	School enrollment records.	Count the total number of students enrolled in the school at the time of assessment.	CS, outside agent of the CS, community organization, or school supervisor.

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Table 1: *continued*

Indicator and calculation	Data requirement	Sources of information	Data collection process	Recommended collection agent
Average Grade Completed by Age 10 (using household sample survey data) [c] (Sum of school grades completed by all 10-year-olds in all sample households) (Total number of 10-year-old children in all surveyed households)	Sum of the school grades completed by all identified 10-year-old children in all surveyed households. *(numerator)*	Household sample survey; school records.	Determine the number of school grades completed by each of the 10-year-olds identified in the surveyed households. If household members do not know grade levels, school records may be consulted. Add the school grades of all surveyed 10-year-olds together to obtain the sum.	CS or outside agent of the CS.
	Total number of 10-year-old children in all surveyed households. *(denominator)*	Household sample survey; birth records, parents' estimates of age.	Select sample households from the population (catchment area) as per the process outlined in FANTA's *Sampling Guide* (Magnani 1997). Determine the number of children in each household surveyed who have reached their tenth birthday but not their eleventh birthday. If exact age is not known, use birth records, reference events, and parents' estimates.	CS or outside agent of the CS.

[c] For Average Grade Completed by Age 10, a household sample survey is the recom-mended strategy because obtaining accurate data on the grades completed by each 10-year-old in a population poses substantial logistical problems.

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Table 1: *continued*

Indicator and calculation	Data requirement	Sources of information	Data collection process	Recommended collection agent
Average Grade Completed by Age 10 *(using full population data)* (Sum of school grades completed by all 10-year-olds in the population) (Total number of 10-year-old children in the population)	Number of school grades completed by each 10-year-old child in the population *(numerator)*	School records; local records, population surveys.	If age information is available in school registers, then school grades completed by 10-year-olds can be collected from these. Otherwise, using local records or population survey information, a list of the names of 10-year-olds must be drawn up and their grades checked from school records. If 10-year-olds in the area attend schools other than the one under assessment, then these should also be checked to obtain fully accurate data. If none of these methods are possible, a full household survey can be conducted, though this may be time-consuming and costly. Add the grades completed by all 10-year-olds together to obtain the sum.	Given the labor-intensive and community-level nature of collection of this data, it may be most cost-effective for community organizations to gather this data.
	Number of 10-year-old children in the population. *(denominator)*	Local records; community survey information; census information.	Calculate the number of 10-year-old children in the area. If population surveys have been conducted or if local birth records exist, they may be used. Otherwise, regional census information can be used to extrapolate an estimate.	CS, outside agent of the CS, or community organization.
Survival Rate to Grade 5 (using the apparent cohort method) [D] (Total number of children enrolled in grade 5 in school year Y) * 100 (Total number of children enrolled in grade 1 in school year Y-4)	Number of students enrolled in grade 5 in a given reference year Y. *(numerator)*	School enrollment and grade-level records from the reference year.	Count the number of students enrolled in grade 5 in the chosen reference year.	CS or outside agent of the CS.
	Number of students enrolled in grade 1 in year Y-4, four years before the reference year. *(denominator)*	School enrollment and grade-level records from the year four years before the reference year.	Count the number of students enrolled in grade 1 in the year four years before the reference year.	CS or outside agent of the CS.

[D] This method is useful when no data on students repeating grades are available and in schools where automatic promotion policies are in effect.

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Table 1: *continued*

Indicator and calculation	Data requirement	Sources of information	Data collection process	Recommended collection agent
Survival Rate to Grade 5 *(using the reconstructed cohort method)*	Grade-wise enrollment for two consecutive school years (Y and Y+1).	School enrollment and grade-level records.	Count the number of students enrolled in each grade during the two selected years.	CS or outside agent of the CS.
Using enrollment and repetition data for grades 1 to 5 for two consecutive years, grade-wise promotion, repetition, and dropout rates are calculated. These rates are then used to create a cohort flow from which the survival rate to grade 5 is calculated. See Appendix 1 to this volume for details of the calculation process.	The number of children in each grade in year Y who repeat that grade during the following school year Y+1.	School enrollment and grade-level records.	Count the number of students in each grade in the reference year Y who repeated the same grade in the following year, Y+1.	CS or outside agent of the CS.
Dropout Rate (Number of children not completing the school year in a given year) * 100 (Number of children enrolled in school in the given year)	Number of children not completing the school year in a given year. *(numerator)*	School examination or other records.	Out of the children enrolled in the given school year, count how many did not meet completion requirements, such as final examination, or other agreed-upon requirements.	CS, outside agent of the CS, or community organization.
	Number of children enrolled in school during the given year of assessment. *(denominator)*	School enrollment records.	Obtain from school records the number of children enrolled in the given year.	CS, outside agent of the CS, community organization, or school supervisor.
Promotion Rate (Number of children promoted to the next grade at the end of a given school year) *100 (Number of children enrolled in school in the given school year)	Number of children who are promoted to the next grade at the end of a given school year. *(numerator)*	School grade records, promotion records, examination results records.	From examination of grade records and examination result records, count the number of students who were promoted to the next grade at the end of the given school year.	CS, outside agent of the CS, or community organization.
	Number of children enrolled in the given school year. *(denominator)*	School enrollment records.	Count the number of students enrolled in the given year.	CS, outside agent of the CS, community organization, or school supervisor.

3.

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Table 1: *continued*

Indicator and calculation	Data requirement	Sources of information	Data collection process	Recommended collection agent
Continuation Rate (Number of children enrolled in year Y+1) ñ (Number of new grade-1 enrollees in year Y+1) + (Number of children who graduated out of the school in year Y) ñ (Other [non-grade-1] new enrollees in year Y+1) * 100 (Number of children enrolled in year Y)	Number of students enrolled during year Y+1. *(numerator)*	School enrollment records for year Y+1.	Count the number of students enrolled during year Y + 1, the year following the reference year.	CS or outside agent of CS.
	Number of new grade-1 enrollees in year Y+1. *(numerator)*	School enrollment records for year Y+1.	Count the number of students newly enrolling in grade 1 during year Y+1.	CS or outside agent of CS.
	Number of children who graduate out of the school in year Y. *(numerator)*	Graduation or examination records for year Y.	Count the number of students who graduated out of the school (or out of grade 5 if that is the parameter) during year Y.	CS or outside agent of CS.
	Number of students newly enrolled in grades other than grade 1 during year Y+1. *(numerator)*	School enrollment and grade-level records for years Y and for Y+1.	Count the number of students newly enrolled in year Y+1, not including those entering grade 1. Count only those students who were not enrolled in year Y.	CS or outside agent of CS.
	Number of students enrolled during reference year Y. *(denominator)*	School enrollment records for year Y.	Count the number of students enrolled during the reference year Y.	CS or outside agent of CS.

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34

Appendix I

Calculating cohort survival to Grade 5 using the reconstructed cohort method

$$\frac{\text{(Number of children in a given school cohort who reach grade 5 without repeating)} * 100}{\text{Number of children in the original school cohort}}$$

Using this method, the numerator and the denominator in the above calculation are derived from school records. Grade-wise promotion, repetition, and dropout rates are used to create a cohort flow from which values for the above ratio can be reconstructed.

Enrollment and repetition data from two consecutive years are used to determine the rates of promotion, repetition, and dropout for each grade between 1 and 5 for those two years. A cohort flow for five school years is then developed that shows how many students would progress from one grade to the next each year assuming the obtained grade-wise promotion, repetition, and dropout rates remain the same throughout the five school years. This cohort flow can then be used to calculate what percentage of grade 1 students would reach grade 5.

The steps required to calculate the survival rate to grade 5 using this method are presented below. A full example is given for illustrative purposes.

Step 1: Compile data on enrollment and repeaters for two consecutive school years for grades 1-5. Repeaters refer to children enrolled in the indicated grade during both of the given years (i.e., in the example, 1995 and 1996). (Note: These numbers are taken from an actual situation using province-level data. The computations needed to calculate school-level rates are the same.)

Example

Grade	1	2	3	4	5
1995 Enrollment	88,345	80,347	74,993	51,877	44,186
1996 Enrollment	83,681	85,747	76,527	65,582	45,336
Repeaters	10,782	9,768	11,159	8,636	7,138

Step 2: Calculate grade-wise rates of promotion, repetition, and dropout based on the data.

Promotion Rate =

$$\frac{\text{(Number of children enrolled in Grade X+1 in Year Y+1 – Repeaters in Grade X+1)} * 100}{\text{Number of children enrolled in Grade X in Year Y}}$$

*Example: Promotion Rate for Grade 1 to Grade 2 = ([85,747-9,768]/88,345) * 100 = 86%*

Repetition Rate =

$$\frac{\text{(Number of repeaters in Grade X)} * 100}{\text{Number of children enrolled in Grade X in Year Y}}$$

*Example: Repetition Rate for Grade 1 = (10,782/88,345) * 100 = 12.2%*

Dropout Rate =

$$\frac{\text{(Number of children enrolled in Grade X in Year Y – Repeaters in Grade X –}\\ \text{[Number of children enrolled in Grade X+1 in Year Y+1 – Repeaters in Grade X+1])} * 100}{\text{Number of children enrolled in Grade X in Year Y}}$$

*Example: Dropout Rate for Grade 1 = ([88,345-10,782- [85,747-9,768=75,979]]/88,345) * 100 = 1.8%*

Grade	1	2	3	4	5
Promotion	86.0%	81.3%	76.4%	73.7%	NA*
Repetition	12.2%	12.2%	15.0%	16.6%	16.2%
Dropout	1.8%	6.5%	8.6%	9.7%	NA*

* Grade 6 data required for calculation

Step 3: Apply the promotion, repetition, and dropout rates to a representative group of 1,000 children to create a cohort flow. Using a representative number of children such as 1,000 simplifies the calculations.

Example: For Grade 1: Promotion Rate is 86%, Repetition Rate is 12.2%, and Dropout Rate is 1.8%. So for a representative 1,000 children, 860 were promoted to grade 2; 122 repeated grade 1; and 18 dropped out.

School year	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5
1995	**1000**				
18 dropped out					
122 repeated					
1996		**860**			
56 dropped out					
105 repeated					
1997			**699**		
60 dropped out					
105 repeated					
1998				**534**	
52 dropped out					
89 repeated					
1999					**393**

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Step 4: Calculate the cohort survival rate to grade 5 by dividing the number of students in the cohort flow who reach grade 5 in the final year by the number in the original cohort and multiplying by 100. *Example:* Cohort Survival to Grade 5 = (393/1000) * 100 = 39.3%

This indicator may be measured at any time for which the data are available. Since this method measures the status of survival to grade 5 at a given point in the program cycle (the school year cycle from which data are taken), it is not necessary – and may not be beneficial – to wait five years to measure changes in this indicator. A cohort survival rate to grade 5 calculated using 1995 and 1996 data shows the status in 1995-96 only, not the status in the future years reconstructed from the data. This rate, 39.3 percent, is a 1995-96 cohort survival rate to grade 5. Program managers may find it useful to measure this again using 1998-99 data to gauge program impact during the three ensuing years.

Furthermore, programs in the midst of their program cycle that wish to use this as an evaluation indicator can obtain baseline values retroactively if enrollment and repetition data are available for the first year of the program and for the preceding year. For example, if a program is in the midst of a five-year cycle that began in 1998, the baseline rate can be obtained using 1997 and 1998 enrollment and repetition data (if available). A mid-term rate can be obtained using 1999 and 2000 enrollment and repetition data, and a final evaluation rate can be obtained using 2001 and 2002 data.

Appendix 2: The Title II Generic Indicators

Category	Level	Indicator
Health, nutrition and MCH	Impact	% stunted children 24-59 months (height/age Z-score)
		% underweight children by age group (weight/age Z-score)
		% infants breastfed w/in 8 hours of birth
		% infants under 6 months breastfed only
		% infants 6-10 months fed complementary foods
		% infants continuously fed during diarrhea
		% infants fed extra food for 2 weeks after diarrhea
	Annual monitoring	% eligible children in growth monitoring/promotion
		% children immunized for measles at 12 months
		% of communities with community health organization
		% children in growth promotion program gaining weight in past 3 months (by gender)
Water and Sanitation	Impact	% infants with diarrhea in last two weeks
		liters of household water use per person
		% population with proper hand washing behavior
		% households with access to adequate sanitation (also annual monitoring)
	Annual monitoring	% households with year-round access to safe water
		% water/sanitation facilities maintained by community
Household food consumption	Impact	% households consuming minimum daily food requirements
		number of meals/snacks eaten per day
		number of different food/food groups eaten
Agricultural productivity	Impact	annual yield of targeted crops
		yield gaps (actual vs. potential)
		yield variability under varying conditions
		value of agricultural production per vulnerable household
		months of household grain provisions
		% of crops lost to pests or environment
		annual yield of targeted crops
	Annual monitoring	number of hectares in which improved practices adopted
		number of storage facilities built and used
Natural resource management	Impact	imputed soil erosion
		imputed soil fertility
		yields or yield variability (also annual monitoring)
	Annual monitoring	number of hectares in which NRM practices used
		seedling/ sapling survival rate
FFW/ CFW roads	Impact	agriculture input price margins between areas
		availability of key agriculture inputs
		staple food transport costs by seasons
		volume of agriculture produce transported by households to markets
		volume of vehicle traffic by vehicle type
	Annual monitoring	kilometers of farm to market roads rehabilitated
		selected annual measurements of the impact indicators

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